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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/584,328	05/30/2000	Kurt E. Petersen	22660-0026US	1737

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EXAMINER

QUAN, ELIZABETH S

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 11/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/584,328

Applicant(s)

PETERSEN ET AL.

Examiner

Elizabeth Quan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 43-103 is/are pending in the application.
- 4a) Of the above claim(s) 97-103 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 54-85 is/are allowed.
- 6) ☒ Claim(s) 43,44,48,49,53,86-88 and 91-93 is/are rejected.
- 7) ☐ Claim(s) 45-47,50-52,89,90 and 94-96 is/are objected to.
- 8) ☒ Claim(s) 43-103 are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

1. Newly submitted claims 97-103 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The original, examined claims were directed to apparatus. Claims 97-103 are directed to <sup>a</sup>method. The apparatus can ~~x~~ be used for a method other than conducting chemical reactions, such as storing samples for detection. Furthermore, the apparatus is classified in class 422 and method is classified in 436, which demonstrates that a separate search must be conducted for these method claims.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 97-103 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 43, 44, 49, 53 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,940,527 to Kazlauskas et al.

Kazlauskas et al. disclose a device for conducting a chemical reaction comprising a body (18) and a reaction vessel (16) extending from the body (FIGS. 3 and 4). The reaction vessel has a reaction chamber, inlet port connected to the reaction chamber via an inlet channel, and outlet

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port connected to the reaction chamber via an outlet channel (FIGS. 3 and 4). The inlet port of the vessel is connected to the first channel in the body, the outlet port of the vessel is connected to the second channel in the body, and the body further includes a vent (106) in fluid communication with the second channel for venting gas from the second channel (FIGS. 3 and 4). A differential pressure source is provided for forcing fluid in the first channel in the body to flow through the inlet port of the vessel and into the reaction chamber.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 86, 87, 91, 93 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,940,527 to Kazlauskas et al.

Kazlauskas et al. disclose a device for conducting a chemical reaction comprising a body (18) and a reaction vessel (16) extending from the body (FIGS. 3 and 4). The reaction vessel has a reaction chamber, inlet port connected to the reaction chamber via an inlet channel, and outlet port connected to the reaction chamber via an outlet channel (FIGS. 3 and 4). The inlet port of the vessel is connected to the first channel in the body, the outlet port of the vessel is connected to the second channel in the body, and the body further includes a vent (106) in fluid communication with the second channel for venting gas from the second channel (FIGS. 3 and 4). A differential pressure source is provided for forcing fluid in the first channel in the body to flow through the inlet port of the vessel and into the reaction chamber.

Kazlauskas et al. do not explicitly disclose the reaction chamber with at least two transparent walls. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Kazlauskas et al. to have the reaction chamber transparent such that the subject chemicals are bathed with light from every direction, which is a concept important in accurate detection (COL. 1, lines 5-10 and 47-51).

8. Claims 86, 88, 91, 93 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,580,523 to Bard in view of U.S. Patent No. 5,660,794 to Gilbreath, Jr. et al.

Bard discloses a device for conducting a chemical reaction (see ABSTRACT). The device comprises of a body (20) and a reaction vessel (100) (see FIGS. 1-3; COL. 5, lines 19-48;

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COL. 6, lines 26-33). The body (20) has a first channel (50) and second channel (51) formed therein (see FIGS. 1-3; COL. 5, lines 19-48; COL. 6, lines 26-33). The reaction vessel (100), which extends from the body (20), includes a reaction chamber with an inlet port connected to the reaction chamber via an inlet channel and outlet port connected to the reaction chamber via an outlet channel (see FIGS. 1-3; COL. 5, lines 19-48; COL. 6, lines 26-33). The inlet port of the reaction vessel (100) is connected to the first channel (50) in the body (20), and the outlet port of the reaction vessel (100) is connected to the second channel (51) in the body (20) (see FIGS. 1-3; COL. 5, lines 19-48; COL. 6, lines 26-33). A differential pressure source is provided to force fluid in the first channel in the body to flow through the inlet port of the vessel and into the reaction chamber in a continuous manner (ABSTRACT). The body further includes a mixing chamber, which is connected to the inlet port of the vessel via the first channel (FIGS. 1-9; COLS. 4, 7, and 8). The reaction chamber is defined by two opposing major walls and sidewalls connecting the major walls to each other (FIGS. 1-3). The reaction chamber has at least one transparent wall where it is irradiated with light from a 450-watt xenon lamp via filter (COL. 7, lines 62-64). The undesired products are vented and the desired product is purified through a chromatographic separator (COL. 7, lines 64-67). Detectors, which may include electrochemical, spectroscopic, or fluorescence-based detectors, may be provided to monitor the reactants, intermediates, or final products (COL. 4, lines 22-52).

Bard does not explicitly disclose the reaction chamber with at least two transparent walls. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Bard to have the reaction chamber transparent such that the subject chemicals are bathed with light from every direction, which is a concept

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important in conducting a photochemical reaction in producing maximum product yields (COL. 1, lines 5-10 and 47-51).

9. Claims 48, 92 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,940,527 to Kazlauskas et al. or U.S. Patent No. 5,580,523 to Bard in view of U.S. Patent No. 5,660,794 to Gilbreath, Jr. et al.

Referring to claim 28, Kazlauskas et al. or Bard in view of Gilbreath, Jr. et al. fail to quantify the width and thickness of the chamber. Applying the decision of *In re Aller*, discovering the optimum workable range of the width and thickness of the chamber involves only routine skill in the art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to determine through experimentation a width to thickness ratio of at least 4:1 and a thickness range of less than 2 mm to maximize sensitivity and precision of the detection device using a light source and provide an optimal size chamber for creating a certain amount of product.

#### ***Allowable Subject Matter***

10. Claims 45-47, 50-52, 89, 90, 94, 95, 96 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. Claims 54-85 allowed.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Quan whose telephone number is (703) 305-1947. The examiner can normally be reached on M-F (8:00-4:30).


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (703) 308-4037. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Elizabeth Quan  
Examiner  
Art Unit 1743

eq

  
Jill Warden  
Supervisory Patent Examiner  
Technology Center 1700